Title

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Authors

Park, Christina
Benson-Hernandez, Taryn
Soohoo, Melissa
et al.

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Abstract 15170: High Density Lipoprotein Cholesterol and Mortality Risk Across eGFR Strata in Adult NHANES Males and Females

Park, Christina[1]; Benson-Hernandez, Taryn[2]; Soohoo, Melissa[1]; Kleine, Carola-Ellen[1]; Hsiung, Jui-Ting[1]; Marroquin, Maria V[1]; Goto, Masaki[3]; Kovesdy, Csaba P[4]; Kalantar-Zadeh, Kamyar[3]; Streja, Elani[1]; Moradi, Hamid[1]

Author Information
[1]Nephrology/Rsch, Tibor Rubin Long Beach VA Med Cntr, Long Beach, CA
[2]Nephrology/Rsch, Harold Simmons Cntr for Kidney Disease Rsch and Epidemiology, Orange, CA
[3]Nephrology/Rsch, UC Irvine Med Cntr, Orange, CA
[4]Nephrology/Rsch, Memphis VA Med Cntr, Memphis, TN

Abstract

Background: Previous studies have shown a U-shaped relationship between high-density lipoprotein cholesterol (HDL) and risk of mortality across estimated glomerular filtration rate (eGFR) categories in a cohort of mostly older white male US veterans. However, this relationship has not been studied in a nationally representative and diverse cohort of male and female adults.

Methods: We used the National Health and Nutrition Examination Survey (NHANES) datasets from 1999 through 2010 to identify 31,249 adults with available measurements of HDL and creatinine. Using Cox models, we evaluated the association between HDL and all-cause mortality, according to three eGFR levels with multivariable adjustment for demographics, comorbidities, medication use, body mass index and albumin. Analyses were conducted separately in males and females, with their own respective HDL categories and reference groups.

Results: Mean cohort age+/-SD was 48+/-20 years; 52% were female and 20% were non-Hispanic Black. A total of 2,796 deaths was observed with a median (interquartile) follow-up time of 6 (3, 9) years. In male adults with eGFR levels of >=90 ml/min/1.73m^2, both lower and higher HDL (<50 and >=60 mg/dl, respectively) were associated with higher mortality risk. However, the association for lower HDL was incrementally attenuated across strata with lower eGFR levels, while associations for higher HDL were attenuated in both eGFR strata <90 ml/min/1.73m^2. Conversely, in females, there were no associations of lower HDL with mortality for higher eGFR strata, but lower HDL was associated with higher mortality risk for eGFR <60 ml/min/1.73m^2. Additionally, in females, higher HDL non-significantly trended toward lower mortality risk across all strata. [Figure 1]

Conclusion: In both male and female US adults, the association of lower HDL with mortality is affected by kidney disease stage (as represented by eGFR strata). Of note, similar to the US veteran cohort, higher HDL

was associated with worse mortality risk in males with eGFR >=90 ml/min/1.73m^2. Further studies are needed to examine the underlying mechanisms in the HDL-mortality association.
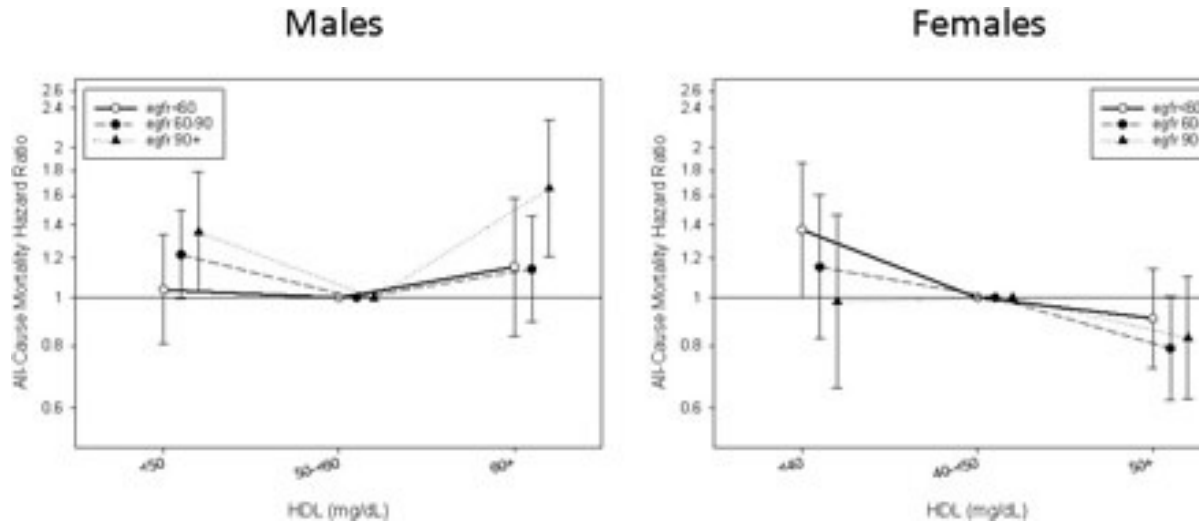
HDL; Mortality; Epidemiology; Survival